

**REMARKS**

Claims 1 to 24 are pending in the application. Claim 22 has been allowed. Claims 1 to 5, 8 to 13, and 17 to 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Malhotra et al. (U.S. Patent 5,931,995) in view of either Schwarz et al. (U.S. Patent 5,122,187) or Siddiqui (U.S. Patent 5,939,468), Watt (U.S. Patent 4,105,806), and Takazawa et al. (U.S. Patent 5,279,655). Claims 6 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. and further in view of Tobias et al. (U.S. Patent 5,286,288). Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. and further in view of Nishizaki et al. (U.S. Patent 6,022,910). Claims 14 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. and further in view of Shacklette (U.S. Patent 5,378,403) and WO 93/22775. Claims 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Malhotra et al. in view of Watt.

With respect to the rejection of claims 23 and 24 under §103 as being unpatentable over Malhotra et al. in view of Watt, the Examiner has stated that Malhotra et al. discloses a hot melt ink possessing a melting temperature of 125 to 160°C, a melt viscosity of 5 to 20 centipoise, and an acoustic loss value of less than 100 decibels per millimeter, that the ink contains a colorant such as a dye or pigment, 0.5 to 10 percent antioxidant, and UV absorber, that the reference discloses an acoustic ink jet printing process, that the reference discloses the use

of 1 to 55 percent compounds such as benzaldehyde, 3-methoxy benzaldehyde, 4-methoxy benzaldehyde, 3-methyl benzaldehyde, 2-hydroxy benzaldehyde, and cinnamaldehyde, and 5 to 97 percent compounds such as 2,3,4-trimethoxybenzaldehyde, 3,5-dimethoxy benzaldehyde, 2,5-dimethoxy benzaldehyde, and 3-benzyloxy benzaldehyde, that Malhotra et al. discloses 2,3,4-trimethoxybenzaldehyde, 2-hydroxy benzaldehyde, and 3-benzyloxy benzaldehyde while the present claims require either 2,3,5-trimethoxybenzaldehyde, 2,3,6-trimethoxybenzaldehyde, 2,4,5-trimethoxybenzaldehyde, 2,4,6-trimethoxybenzaldehyde, 3-hydroxy benzaldehyde, 4-hydroxy benzaldehyde, or 4-benzyloxy benzaldehyde, that in each case the only difference between the reference compounds and those presently claimed are the position of the substituents, i.e., ortho, meta, or para, that absent any evidence of criticality, one of ordinary skill in the art would expect the benzaldehyde to function in the same manner regardless of the position of the substituents, that Malhotra et al. broadly discloses the use of benzaldehydes or, for instance, 3-methoxy benzaldehyde while the present claims require more specific types of benzaldehydes such as 4-hydroxy-3-methoxy benzaldehyde, that one of ordinary skill in the art would have recognized that the broad disclosure of benzaldehyde or 3-methoxy benzaldehyde encompasses the use of specific types of these compounds such as those presently claimed, and that the choice of these specific types of compounds would have been within the bounds of routine experimentation, and that the difference between Malhotra et

al. and the present claimed invention is the requirement in the claims of (a) viscosity modifier and (b) aldehyde copolymer.

With respect to difference (a), the Examiner has stated that Malhotra et al. discloses benzaldehyde compounds as presently claimed but does not explicitly refer to these compounds as viscosity modifiers, and that given that the reference compounds are the same type as the compounds presently claimed, i.e. benzaldehydes, it would have been natural for one of ordinary skill in the art to infer that the reference compounds intrinsically function as viscosity modifiers and thereby arrive at the claimed invention. With respect to difference (b), the Examiner has stated that Watt, which is drawn to ink compositions, discloses the use of polyglycidyl ethers of formaldehyde as a binder, and that in light of the motivation for using aldehyde copolymers disclosed by Watt as described above, it would have been obvious to one of ordinary skill in the art to use these copolymers in the ink composition of Malhotra et al. to produce an ink with good flexibility and enhanced ejection from the ink jet printer or, alternatively, improved adhesion to the substrate, and thereby arrive at the claimed invention.

Applicant disagrees with this position for the reasons set forth in the previous two Amendments with respect to the rejection of claims 1 to 5, 8 to 13, and 17 to 22 under §103 as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al., and further for the reasons set forth hereinbelow.

Applicant continues to traverse the rejections of claims 1 to 21 under §103 for the reasons set forth in the previous Amendment.

In response to Applicant's position as set forth in the previous Amendment to the effect that there is no motivation to combine either Siddiqui or Watt with Malhotra et al. given that Malhotra et al. is drawn to solid inks and both Siddiqui and Watt are drawn to liquid inks, the Examiner has stated that Applicant has provided no clear and convincing evidence that components present in liquid ink jet inks cannot be added to solid ink jet inks, and that Siddiqui and Watt are used as teaching references, so it is not necessary for these secondary references to contain all the features of the presently claimed invention. The Examiner has stated that these references each teach a certain concept, and in combination with the primary reference, disclose the presently claimed invention.

Applicant disagrees with this position. Applicant reminds the Examiner that the burden of establishing a case of obviousness rests with the Examiner, and that the Examiner may not make an assertion, unsupported by facts, of unpatentability and require Applicant to provide evidence to rebut the assertion. In ex parte prosecution, the PTO has the burden of producing a factual basis for a rejection. In re Piasecki, 745 F.2d 1468, 223 U.S.P.Q. 785 (Fed. Cir. 1984); In re Gordon, 733 F.2d 900 (Fed. Cir. 1984). As the Court of Appeals for the Federal Circuit stated in In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984): "The Supreme Court in Graham v. John Deere Co., 383 U.S. 1, 148 U.S.P.Q. 459 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the 'burden of proof on the Patent Office which requires it to produce the factual basis

for its rejection of an application under sections 102 and 103'. In re Warner, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967)." The Examiner cannot require Applicant to "provide . . . clear and convincing evidence that components present in liquid ink jet inks cannot be added to solid ink jet inks". The references cited by the Examiner fail to teach or suggest to one of ordinary skill in the art the ink compositions recited in the instant claims. The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. In re Fine, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988); In re Newell, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989); Ex Parte Levengood, 28 USPQ 2d 1300 (Bd. Pat. App. & Int. 1993). The Examiner has failed to make such a showing. Applicant, accordingly, is of the position that the present invention is patentable with respect to the teachings of these references.

In response to Applicant's position as set forth in the previous Amendment to the effect that Malhotra et al. does not disclose the time necessary for the ink to change from solid state to liquid state and that compositions with the same melting temperature do not necessarily possess the same melting time, the Examiner has stated that while Applicant argues that compositions with the same melting temperature do not necessarily possess the same melting time, it is noted that not only does the ink composition of Malhotra et al. possess the same melting temperature as presently claimed, the ink composition of Malhotra et al. taken in view of either Schwarz et al. or Siddiqui and Watt

comprises the same ingredients as presently claimed, i.e. aldehyde copolymer, nonpolymeric aldehyde viscosity modifier, ink vehicle, and colorant, and that in light of this, and absent evidence to the contrary, it is the Examiner's position that the ink composition disclosed by Malhotra et al. taken in view of either Schwarz et al., Siddiqui, or Watt would possess the same melting time as presently claimed.

Applicant disagrees with this position. Functional language in a claim must not be ignored. See, e.g., In re Caldwell, 319 F.2d 254, 138 U.S.P.Q. 243 (C.C.P.A. 1963). As the court held in In re Swinehart, 439 F.2d 210, 169 U.S.P.Q. 226 (C.C.P.A. 1971), there is nothing wrong with attempting to define something (in the Swinehart case, a composition) by what it does rather than by what it is (as evidenced by specific structure or material, for example). Claims such as instant claim 4, which recites an ink that undergoes, upon heating, a change from a solid state to a liquid state in a period of no more than about 100 milliseconds, encompass only those compositions that exhibit this functional characteristic. Nothing in Malhotra et al., viewed either alone or in combination with Schwarz et al., Siddiqui, or Watt teaches or suggests selecting the ink ingredients so that this functional limitation is met. Accordingly, Applicant is of the position that claim 4 is particularly in condition for allowance with respect to the teachings of these references.

In response to Applicant's position as set forth in the previous Amendment to the effect that there is no motivation to combine the teachings of Malhotra et al. with the teachings of Nishizaki et al., the Examiner has stated that given that Malhotra et al. in view of

either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. disclose an ink with similar ingredients to those presently claimed, i.e., aldehyde copolymer, nonpolymeric aldehyde, colorant, antioxidant, and UV absorber, it is natural to infer that the ink intrinsically possesses haze values as presently claimed absent any evidence to the contrary, and that to the extent that Nishizaki et al. discloses a hot melt ink comprising synthetic polymer and colorant suitable for use in ink jet printing and further discloses that such hot melt inks having a haze value of 0 to 30 exhibit superior light transmission properties, Nishizaki et al. remains a relevant reference against the present claims.

Applicant disagrees with this position. As discussed in the previous two Amendments, nothing in the combined teachings of Malhotra et al., Schwarz et al., Siddiqui, Watt, and Takazawa et al. teaches or suggests an ink composition as recited in the instant claims. In addition, functional language in a claim must not be ignored. See, e.g., In re Caldwell, 319 F.2d 254, 138 U.S.P.Q. 243 (C.C.P.A. 1963). As the court held in In re Swinehart, 439 F.2d 210, 169 U.S.P.Q. 226 (C.C.P.A. 1971), there is nothing wrong with attempting to define something (in the Swinehart case, a composition) by what it does rather than by what it is (as evidenced by specific structure or material, for example). Claims such as instant claim 7, which recites an ink that generates images having a haze value of no more than about 25, encompass only those compositions that exhibit this functional characteristic. Nothing in Malhotra et al., viewed either alone or in combination with Schwarz et al., Siddiqui, or Watt and further in combination with Nishizaki et al. teaches or suggests selecting the ink ingredients so that this functional

limitation is met. Accordingly, Applicant is of the position that claim 7 is particularly in condition for allowance with respect to the teachings of these references.

In response to Applicant's position as set forth in the previous Amendment to the effect that there is no disclosure in Schwarz et al. of combining aldehyde copolymers with nonpolymeric viscosity modifiers, the Examiner has stated that it is agreed that Malhotra et al. does not disclose aldehyde copolymers as presently claimed, and that Schwarz et al. does not disclose nonpolymeric viscosity modifiers as presently claimed, which is why these references are used in combination, that the ink of Malhotra et al. is open to the inclusion of other ingredients and nothing in Malhotra et al. negates against using ingredients such as an aldehyde copolymer, that Schwarz et al. is cited to teach a specific concept, namely that aldehyde copolymers are conventionally known to be used in hot melt inks to provide images with flexibility to prevent cracking and creasing, and in combination with Malhotra et al. discloses the present invention, and that absent evidence to the contrary, it would have been obvious to one of ordinary skill in the art to use the aldehyde copolymer of Schwarz et al. in the ink of Malhotra et al. and thereby arrive at the claimed invention.

Applicant disagrees with this position. Applicant again reminds the Examiner that the burden of establishing a case of obviousness rests with the Examiner, and that the Examiner may not make an assertion, unsupported by facts, of unpatentability and require Applicant to provide evidence to rebut the assertion. The PTO has the burden under section 103 to establish a prima facie case of obviousness.



It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. In re Fine, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988); In re Newell, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989); Ex Parte Levensgood, 28 USPQ 2d 1300 (Bd. Pat. App. & Int. 1993). Nothing in any of the cited references would lead one of ordinary skill in the art to view them in combination. Further, even if these references were viewed in combination, the combined teachings thereof would not lead one of ordinary skill in the art to arrive at the instant invention.

Applicant believes that the foregoing distinctions place the claims in condition for allowance, and accordingly respectfully requests reconsideration and withdrawal of all grounds for rejection.

In the event the Examiner considers personal contact advantageous to the disposition of this case, she is hereby authorized to call Applicant(s) attorney, Judith L. Byorick, at Telephone Number (716) 423-4564, Rochester, New York.

Application No. 09/404,570

No additional fee is believed to be required for this amendment; the undersigned Xerox Corporation attorney (or agent), however, hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Judith L. Byorick", written over a horizontal line.

Judith L. Byorick  
Attorney for Applicant(s)  
Registration No. 32,606  
(716) 423-4564

JLB/cas  
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Xerox Corporation  
Xerox Square 20A  
Rochester, New York 14644